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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,954	12/04/2002	Sze-Ke Wang	OTMP0029USA	2528

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NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)
P.O. BOX 506
MERRIFIELD, VA 22116

EXAMINER

NGUYEN, MICHELLE P

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 07/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,954

Applicant(s)

WANG, SZE-KE

Examiner

Michelle Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 2-5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because in paragraph 0029, line 6, "light valve 221" should be --light valve 321--. Appropriate correction is required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference signs not mentioned in the description: 317, 321 (see Fig. 7).

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference signs in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. In claim 1, line 9, "reflecting area" should be --reflection area-- in order to maintain consistency throughout the claim terminology (see claim 1, line 5). Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 9 recites the limitation "wherein in the light valve is a thin-film micro-mirror array (TMA)" in lines 1-2. Applicant's description lacks a written description teaching a light valve to be a thin-film micro-mirror array.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA) in view of U.S. Patent No. 6,557,999 to Shimizu.

With regard to claim 1, AAPA discloses a projection display system (projection display system 10) capable of diminishing ghost images, comprising:

an illumination system (illumination system 110) comprising (see Fig. 1):

a light source (light source 111) for emitting at least one light beam (see Fig. 1); and

a field lens (field lens 117) having a first surface (first surface 1171) and a second surface (surface, not numbered, opposite to first surface 1171) opposite to the first surface, the first surface comprising at least one reflection area (see Figs. 1, 2); and

an image system (image system 120) utilizing the field lens and a light valve (light valve 121) mounted adjacent to the second surface of the field lens for reflecting the light beam emitted by the light source (see Fig. 1).

AAPA does not teach the light beam reflected from the light valve to the reflecting area to be further reflected to a region outside of the light valve due to the reflection area. However, Shimizu teaches placing a quarter-wave foil and post-polarizer between a lens (lens 107) and a light valve (panel 102) such that a light beam reflected from the light valve to a reflecting area of a first surface (surface facing screen 108) of the lens is further reflected to a region outside of the light valve due to the reflection area for preventing the display of ghost images (see Col. 7, lines 33-49, Figs. 4, 5; Since light reflected from the reflection area of lens 107 becomes right hand circular polarized, is then shifted by 90 degrees after passing through the quarter wave foil 110, and transmitted away from the panel 102, it is understood that the light is reflected to a region outside of the light valve due, in part, to the reflection area.). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add to the display system of AAPA the quarter-wave foil and post-polarizer of Shimizu for preventing ghost images, and thereby improving display performance.

With regard to claim 6, AAPA teaches the projection display system as discussed above with respect to claim 1 further comprising a color-generator (color generator 113), a light-uniform device (light-uniform device 114) and an illumination lens set (illumination lens set 115) (see Fig. 1).

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With regard to claim 7, AAPA teaches the projection display system as discussed above with respect to claim 1 further comprising a projection lens set (projection lens 122) (see Fig. 1).

With regard to claim 8, AAPA teaches the projection display system as discussed above with respect to claim 1 wherein the light valve is a digital micro-mirror device (DMD) (see paragraph 0005, lines 10-11).

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Shimizu as applied to claim 1 above, and further in view of U.S. Patent No. 6,500,378 to Smith.

AAPA does not teach the light valve as discussed above with respect to claim 1 to be a thin-film-micro-mirror array (TMA). Instead, AAPA teaches the light valve to be a digital micro-mirror device (DMD) (see paragraph 0005, lines 10-11). However, Smith teaches substituting for one well-known modulator such as a DMD another well-known modulator such as a TMA. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the DMD of AAPA with a TMA as taught by Smith for providing alternative means for modulating light.

Allowable Subject Matter

8. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claim 2, the prior art does not teach in combination with all other limitations set forth in the claim a curvature radius of a first surface of a field lens to range from 50 mm to 500 mm.

Claims 3-5 include all limitations set forth in claim 2.

Conclusion

10. The following art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent Application Publication No. US 2003/0058414 A1 to Yahagi teaches employing the curvature of the surface of a lens at a reflection area to cause a light beam reflected from an image surface to the reflection area to be further reflected to a region outside of the image surface.

U.S. Patent No. 5,268,775 teaches employing a quarter wave plate for causing a light beam reflected from a light valve to a reflection area to be further reflected to a region outside of the light valve.

U.S. Patent No. 6,522,453 to Yoneyama teaches employing the curvature of the surface of a lens at a reflection area to cause a light beam reflected from a DMD to the reflection area to not be in a "converged state" when reflected again by the DMD.

U.S. Patent No. 4,981,352 to Tejima et al. teaches employing the curvature of the surface of a lens to direct light in specific directions.

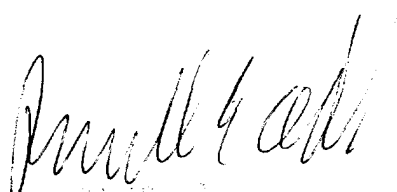
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Nguyen whose telephone number is 703-305-2771. The examiner can normally be reached on M-F 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

mpn
July 11, 2003


RUSS ADAMS
SUPERVISOR, ART UNIT 2851
TECHNICAL CENTER